

AW-CU597

IEEE 802.11 a/b/g/n 1T1R WLAN and Bluetooth Low Energy Microcontroller Module

Datasheet

Rev. B

DF

**(For Standard)
(Halogen Free)**

Features

WiFi

802.11 a/b/g/n/ 1x1, 2.4GHz & 5GHz

Support 20MHz/40MHz up to MCS7

Low power architecture

Support low power TX/RX for short range application

Low power beacon listen mode

Low power Rx mode

Very low power suspends mode (DLPS)

Bluetooth

Support BLE

Support both central and peripheral modes

High power mode (10dbm, share the PA and WIFI) (optional)

Internal co-existence mechanism between and WIFI and BT to share the same antenna

Support BLE5.0

Peripheral Interface

USB host controller with HS/FS/LS capability

SDIO device with highest SDR25 supported

HS_UART/LP_UART supported

Standard and fast mode I2C supported

I2S with 8/12/16/24/32/48/.../176.4 KHz sampling rate

Maximum 2 SPI supported. One supports baud rate up to 50MHz; the other one supports baud rate up to 25MHz



AzureWave Technologies, Inc.

Revision History

Document NO: R2-2597-DST-01

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1. Introduction

1.1 Product Overview

AzureWave presents AW-CU597 802.11a/b/g/n 1T1R WLAN and Bluetooth low energy (5.0) Microcontroller Solution provides a highly cost-effective, flexible and easy to-use hardware/software platform to build a new generation of connected, smart devices. These smart-connected devices enable device to deliver a broad-range of services to consumers including energy-management, demand-response, home automation and remote access. This allows a user to manage comfort and convenience, also run diagnostics and receive alerts and notifications, in addition to managing and controlling the device. Developers can leverage the rich connectivity features of these new smart devices to create a new generation of innovative new applications and services

The architecture features the Realtek RTL8721DM integrated single-chip low power dual band (2.4GHz and 5GHz) wireless LAN and Bluetooth Low Energy (V5.0) communication controller. It consists of high-performance MCU (latest architecture v8m, Cortex-M4F instruction compatible) named KM4, a low power MCU (v8m, Cortex-M0 instruction compatible) named KM0, WLAN (802.11a/b/g/n) MAC, a 1T1R capable WLAN baseband, RF, Bluetooth and peripherals.

The AW-CU597 is powered by production quality, field-tested Realtek Easy Connect software that includes a rich set of software components that work together to support the development of Smart Energy devices, and enable these devices to connect to mobile clients such as smart-phones, Internet-based Cloud and Smart-Grid services. The feature-rich software stack enables OEMs to focus on application-specific software functionality, thus enabling rapid development and reduced software development costs and risks.

1.2 Block Diagram

TBD

1.3 Specifications Table

1.3.1 General

Features	Description
Product Description	802.11a/b/g/n 1T1R WLAN and Bluetooth low energy (5.0) Microcontroller Module
Major Chipset	RTL8721DM(with pSRAM 4MB)
Flash	Built-in SPI 128M-bit Serial Flash
Host Interface	UART
Dimension	36 mm x 18 mm x 3.15 mm
Package	150-pin LGA
Antenna	Internal Shielding Antenna for WLAN/BT
Weight	2.8 g

1.3.2 WLAN

Features	Description				
WLAN Standard	IEEE 802.11a/b/g/n, Wi-Fi compliant				
Frequency Rage	2.4 GHz : 2.412 ~ 2.484 GHz, ISM radio band 5 GHz : 5.150 ~5.850GHz				
Modulation	DSSS, OFDM, DBPSK, DQPSK, CCK, 16-QAM, 64-QAM for WLAN				
Number of Channels	2.4GHz USA, North America, Canada and Taiwan – 1 ~ 11 China, Australia, Most European Countries – 1 ~ 13 Japan, 1 ~ 13 J0 5GHz USA, EUROPE – 36, 38, 40, 44, 46, 48, 52, 54, 56, 60, 62, 64, 100, 102,104, 108, 110, 112, 116, 118, 120, 124, 126, 128, 132, 134, 136, 140, 142, 144,149, 151, 153, 157, 159, 161, 165				
Calibration Output Power	2.4G				
		Min	Typ	Max	Unit
	11b (11Mbps) @EVM<35%	15	18	20	dBm
	11g (54Mbps) @EVM≤-27 dB	14	17	19	dBm
	11n (HT20 MCS7) @EVM≤-28 dB	13	16	18	dBm
	11n (HT40 MCS7)	13	16	18	dBm

	@EVM≤-28 dB					
	5G					
		Min	Typ	Max	Unit	
	11a (54Mbps) @EVM≤-27 dB	12	14	16	dBm	
	11n (HT20 MCS7) @EVM≤-28 dB	11	13	15	dBm	
	11n (HT40 MCS7) @EVM≤-28 dB	11	13	15	dBm	
Limit Output Power	2.4G					
			Min	Typ	Max	Unit
	11b (11Mbps) @EVM<35%	FCC		TBD		dBm
		CE		TBD		
	11g (54Mbps) @EVM≤-27 dB	FCC		TBD		dBm
		CE		TBD		
	11n (HT20 MCS7) @EVM≤-28 dB	FCC		TBD		dBm
		CE		TBD		
	5G					
	Band1&2&3					
			Min	Typ	Max	Unit
	11a (54Mbps) @EVM≤-27 dB	FCC		TBD		dBm
		CE		TBD		
	11n (HT20 MCS7) @EVM≤-28 dB	FCC		TBD		dBm
		CE		TBD		
	Band4					
			Min	Typ	Max	Unit
	11a (54Mbps) @EVM≤-27 dB	FCC		TBD		dBm
		CE		TBD		
	11n (HT20 MCS7) @EVM≤-28 dB	FCC		TBD		dBm
		CE		TBD		
	* Limit Output Power is according to AZW SAR test.					
Receiver Sensitivity	2.4G					
		Min	Typ	Max	Unit	
	11b (11Mbps)		-90	-82	dBm	
	11g (54Mbps)		-77	-71	dBm	
	11n (HT20 MCS7)		-75	-67	dBm	
	5G					
		Min	Typ	Max	Unit	
	11a (54Mbps)		-77	-71	dBm	
	11n (HT20 MCS7)		-75	-67	dBm	
Data Rate	WLAN:					

	802.11b: 1, 2, 5.5, 11Mbps 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54Mbps 802.11n: up to 150Mbps-single
Security	AES/DES/SHA hardware engine TrustZone-M supported Secure boot supported Debug port access protection and prohibition modes Security e-Fuse Flash Decryption on-the-fly

* HT40 is not yet supported in normal mode

* If you have any certification questions about output power please contact FAE directly.

1.3.3 Bluetooth

Features	Description					
Bluetooth Standard	Bluetooth V5.0 complaint					
Frequency Range	2402~2480MHz					
Modulation	GFSK					
Output Power		Min	Typ	Max	Unit	
	LE 1M	2	4	6	dBm	
	LE 2M	2	4	6	dBm	
Receiver Sensitivity		Min	Typ	Max	Unit	
	LE 1M		-90	-70	dBm	
	LE 2M		-90	-70	dBm	

1.3.4 Operating Conditions

Features	Description
Operating Conditions	
Voltage	3.3V +/- 9%
Operating Temperature	Operating: -20 ~ 85°C
Operating Humidity	less than 85% R.H.
Storage Temperature	-40 ~ 85°C
Storage Humidity	less than 60% R.H.
ESD Protection	
Human Body Model	+/- 3.5KV
Changed Device Model	+/- 500V

2. Pin Definition

2.1 Pin Map

AW-CU597 Top View Pin Map

	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	
	GND	GND	PA8	PA7	CHIP EN	PA2	PA4	PA0	PB31	PB29	PB26	GND	GND	PB23	PB22	K
	GND	GND	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	PB21	PB20	J
	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	PB19	PB18	H
	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	G
	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	3V3	F
	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	E
	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	VBAT MEA	PB7	D
	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	PB6	PB5	C
	GND	GND	PA13	PA15	PA17	PA19	NC	NC	NC	NC	NC	NC	NC	PB4	PB3	B
	GND	GND	PA12	PA14	PA16	PA18	PA27	PA30	PA28	PA26	PA25	PB2	PB1	GND	GND	A

2.2 Pin Table

Pin No	Definition	Basic Description	Voltage	Type
A1	GND	Ground.		GND
A2	GND	Ground.		GND
A3	PB1	The MUX function GPIO pin.		I/O
A4	PB2	The MUX function GPIO pin.		I/O
A5	PA25	The MUX function GPIO pin.		I/O
A6	PA26	The MUX function GPIO pin.		I/O
A7	PA28	The MUX function GPIO pin. (RREF Port, internal 12kΩ pulled down for USB interface)		I/O
A8	PA30	The MUX function GPIO pin.		I/O
A9	PA27	The MUX function GPIO pin.		I/O
A10	PA18	The MUX function GPIO pin.		I/O
A11	PA16	The MUX function GPIO pin.		I/O
A12	PA14	The MUX function GPIO pin.		I/O
A13	PA12	The MUX function GPIO pin.		I/O
A14	GND	Ground.		GND
A15	GND	Ground.		GND
B1	PB3	The MUX function GPIO pin.		I/O
B2	PB4	The MUX function GPIO pin.		I/O
B3	NC	Floating Pin		Floating
B4	NC	Floating Pin		Floating
B5	NC	Floating Pin		Floating
B6	NC	Floating Pin		Floating
B7	NC	Floating Pin		Floating
B8	NC	Floating Pin		Floating
B9	NC	Floating Pin		Floating
B10	PA19	The MUX function GPIO pin.		I/O
B11	PA17	The MUX function GPIO pin.		I/O

B12	PA15	The MUX function GPIO pin.		I/O
B13	PA13	The MUX function GPIO pin.		I/O
B14	GND	Ground.		GND
B15	GND	Ground.		GND
C1	PB5	The MUX function GPIO pin.		I/O
C2	PB6	The MUX function GPIO pin.		I/O
C3	GND	Ground.		GND
C4	GND	Ground.		GND
C5	GND	Ground.		GND
C6	GND	Ground.		GND
C7	GND	Ground.		GND
C8	GND	Ground.		GND
C9	GND	Ground.		GND
C10	GND	Ground.		GND
C11	GND	Ground.		GND
C12	GND	Ground.		GND
C13	GND	Ground.		GND
C14	GND	Ground.		GND
C15	GND	Ground.		GND
D1	PB7	The MUX function GPIO pin.		I/O
D2	VBAT_MEAS	ADC input pin, 5V tolerance		I
D3	GND	Ground.		GND
D4	GND	Ground.		GND
D5	GND	Ground.		GND
D6	GND	Ground.		GND
D7	GND	Ground.		GND
D8	GND	Ground.		GND
D9	GND	Ground.		GND
D10	GND	Ground.		GND

D11	GND	Ground.		GND
D12	GND	Ground.		GND
D13	GND	Ground.		GND
D14	GND	Ground.		GND
D15	GND	Ground.		GND
E1	GND	Ground.		GND
E2	GND	Ground.		GND
E3	GND	Ground.		GND
E4	GND	Ground.		GND
E5	GND	Ground.		GND
E6	GND	Ground.		GND
E7	GND	Ground.		GND
E8	GND	Ground.		GND
E9	GND	Ground.		GND
E10	GND	Ground.		GND
E11	GND	Ground.		GND
E12	GND	Ground.		GND
E13	GND	Ground.		GND
E14	GND	Ground.		GND
E15	GND	Ground.		GND
F1	3V3	3.3V power supply		VCC
F2	GND	Ground.		GND
F3	GND	Ground.		GND
F4	GND	Ground.		GND
F5	GND	Ground.		GND
F6	GND	Ground.		GND
F7	GND	Ground.		GND
F8	GND	Ground.		GND
F9	GND	Ground.		GND

F10	GND	Ground.		GND
F11	GND	Ground.		GND
F12	GND	Ground.		GND
F13	GND	Ground.		GND
F14	GND	Ground.		GND
F15	GND	Ground.		GND
G1	GND	Ground.		GND
G2	GND	Ground.		GND
G3	GND	Ground.		GND
G4	GND	Ground.		GND
G5	GND	Ground.		GND
G6	GND	Ground.		GND
G7	GND	Ground.		GND
G8	GND	Ground.		GND
G9	GND	Ground.		GND
G10	GND	Ground.		GND
G11	GND	Ground.		GND
G12	GND	Ground.		GND
G13	GND	Ground.		GND
G14	GND	Ground.		GND
G15	GND	Ground.		GND
H1	PB18	The MUX function GPIO pin.		Floating
H2	PB19	The MUX function GPIO pin.		Floating
H3	GND	Ground.		GND
H4	GND	Ground.		GND
H5	GND	Ground.		GND
H6	GND	Ground.		GND
H7	GND	Ground.		GND
H8	GND	Ground.		GND

H9	GND	Ground.		GND
H10	GND	Ground.		GND
H11	GND	Ground.		GND
H12	GND	Ground.		GND
H13	GND	Ground.		GND
H14	GND	Ground.		GND
H15	GND	Ground.		GND
J1	PB20	The MUX function GPIO pin.		Floating
J2	PB21	The MUX function GPIO pin.		Floating
J3	NC	Floating Pin		Floating
J4	NC	Floating Pin		Floating
J5	NC	Floating Pin		Floating
J6	NC	Floating Pin		Floating
J7	NC	Floating Pin		Floating
J8	NC	Floating Pin		Floating
J9	NC	Floating Pin		Floating
J10	NC	Floating Pin		Floating
J11	NC	Floating Pin		Floating
J12	NC	Floating Pin		Floating
J13	NC	Floating Pin		Floating
J14	GND	Ground.		GND
J15	GND	Ground.		GND
K1	PB22	The MUX function GPIO pin.		I/O
K2	PB23	The MUX function GPIO pin.		I/O
K3	GND	Ground.		GND
K4	GND	Ground.		GND
K5	PB26	The MUX function GPIO pin.		I/O
K6	PB29	The MUX function GPIO pin.		I/O
K7	PB31	The MUX function GPIO pin.		I/O

K8	PA0	The MUX function GPIO pin.		I/O
K9	PA4	The MUX function GPIO pin.		I/O
K10	PA2	The MUX function GPIO pin.		I/O
K11	CHIP_EN	Enable Chip:1 Enable Chip, 0 Shut Down Chip		I
K12	PA7	The MUX function GPIO pin.		I/O
K13	PA8	The MUX function GPIO pin.		I/O
K14	GND	Ground.		GND
K15	GND	Ground.		GND

3. Electrical Characteristics

3.1 Absolute Maximum Ratings

Symbol	Parameter	Minimum	Typical	Maximum	Unit
3V3	3.3V Power supply	3.0	3.3	3.6	V

3.2 Recommended Operating Conditions

Symbol	Parameter	Minimum	Typical	Maximum	Unit
3V3	3.3V Power supply	3.0	3.3	3.6	V

3.3 Digital IO Pin DC Characteristics

Symbol	Parameter	Minimum	Typical	Maximum	Unit
VIH	Input high voltage	2	--		V
VIL	Input low voltage		--	0.8	V
VOH	Output high voltage	2.4	--		V
VOL	Output low voltage		--	0.4	V

3.4 Host Interface

3.4.1 UART Interface

UART format: 1 start bit, 7/8 data bits, 0/1 parity bit and 1/2 stop bit.

Support up to 6MHz baud rate.

Auto flow control supported.

Interrupt control supported.

IrDA supported.

Loopback mode for test.

Fractional baud rate generator.

Low power mode for Rx path.

Monitor and eliminate Rx baud rate error and own frequency drift automatically for Rx path.

DMA mode supported:

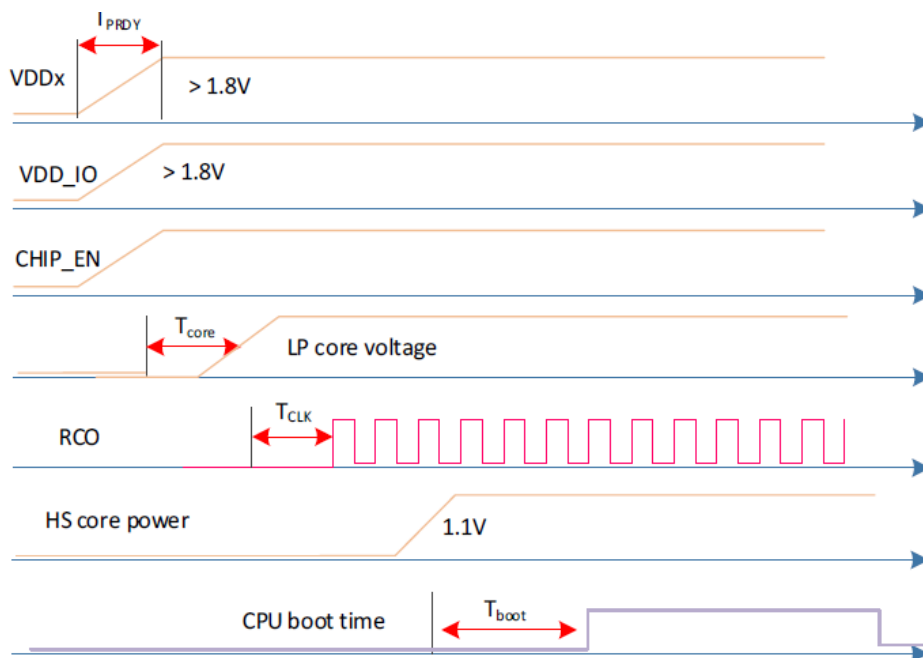
- LP_UART: DMA mode on KM4 platform not supported.

Option for UART Rx to be DMA flow controller.

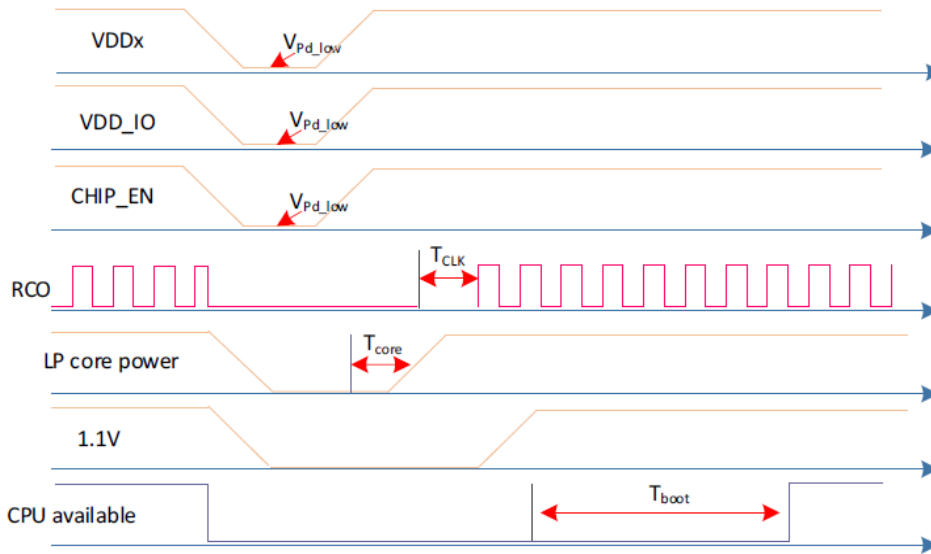
3.5 Power up Timing Sequence

Symbol	Parameter	Min	Typ	Max	Unit
T_{PRDY}	VDDx ready time	0.6	0.6	1	ms
T_{CLK}	Internal ring clock stable time after VDD1833 ready	1	-	-	ms
T_{core}	LP core power ready time	1.5	1.5	-	ms
T_{boot}	HS MCU boot time	200	200	-	ms
V_{pd_low}	Power-down low voltage	0	0	0.3	V
V_{RST}	Shutdown occurs after CHIP_EN lower than this voltage	0	0	$0.2 \cdot VDDx$	V
T_{RST}	The required time that CHIP_EN lower than V_{RST}	1	1	-	ms

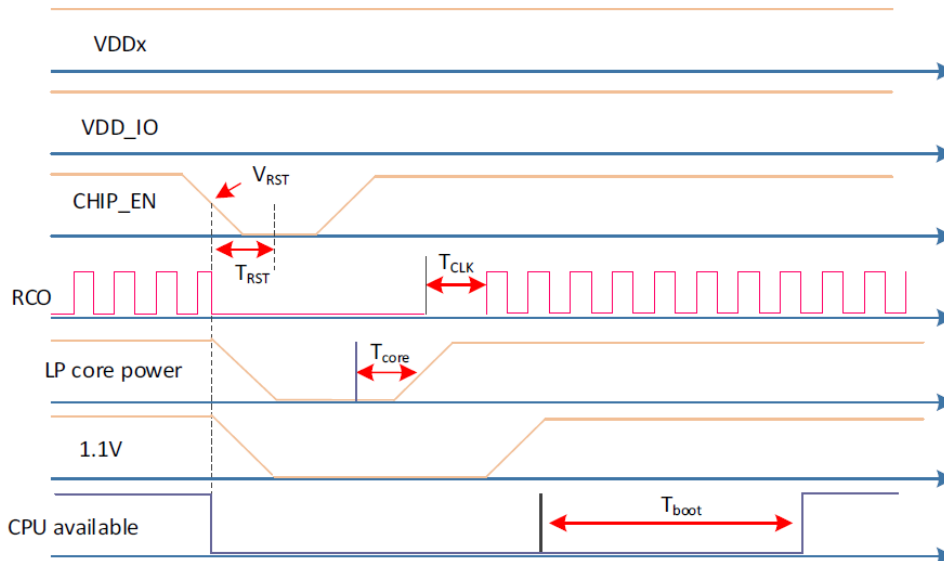
3.5.1 Power-on or Resuming from Deepsleep Sequence



3.5.2 Power-down Sequence



3.5.3 Shutdown Sequence



3.6 Power Consumption*

3.6.1 WLAN

No.	Item			Voltage=3.3V(mA)		
				Max.	Avg.	
1	Link AP (2.4GHz)* ⁽¹⁾			89	20	
2	DeepSleep* ⁽²⁾			0.013	0.012	
3	Wi-Fi RX UDP @ 8Mbps* ⁽³⁾⁽⁴⁾			48	42	
Band (GHz)	Mode	BW(MHz)	RF Power (dBm)	Transmit		
				Max.	Avg.	Duty (%)
2.4	11b@1Mbps	20	18	270	268	99
	11b@11Mbps	20	18	253	251	91
	11g@6Mbps	20	17	256	255	94
	11g@54Mbps	20	17	111	110	24
	11n@MCS0	20	16	242	241	93
	11n@MCS7	20	16	103	102	22
5	11a@6Mbps	20	17	285	283	94
	11a@54Mbps	20	14	108	107	25
	11n@MCS0	20	17	271	270	93
	11n@MCS7	20	13	102	101	23
	11n@MCS0	40	17	259	258	88
	11n@MCS7	40	13	84	83	13

Band (GHz)	Mode	BW(MHz)	Receive	
			Max.	Avg.
2.4	11b@11Mbps	20	59	58
	11g@54Mbps	20	62	61
	11n@MCS7	20	62	61
5	11a@54Mbps	20	64	63
	11n@MCS7	20	64	63
	11n@MCS7	40	63	62

* The power consumption is based on AzureWave test environment, these data for reference only.

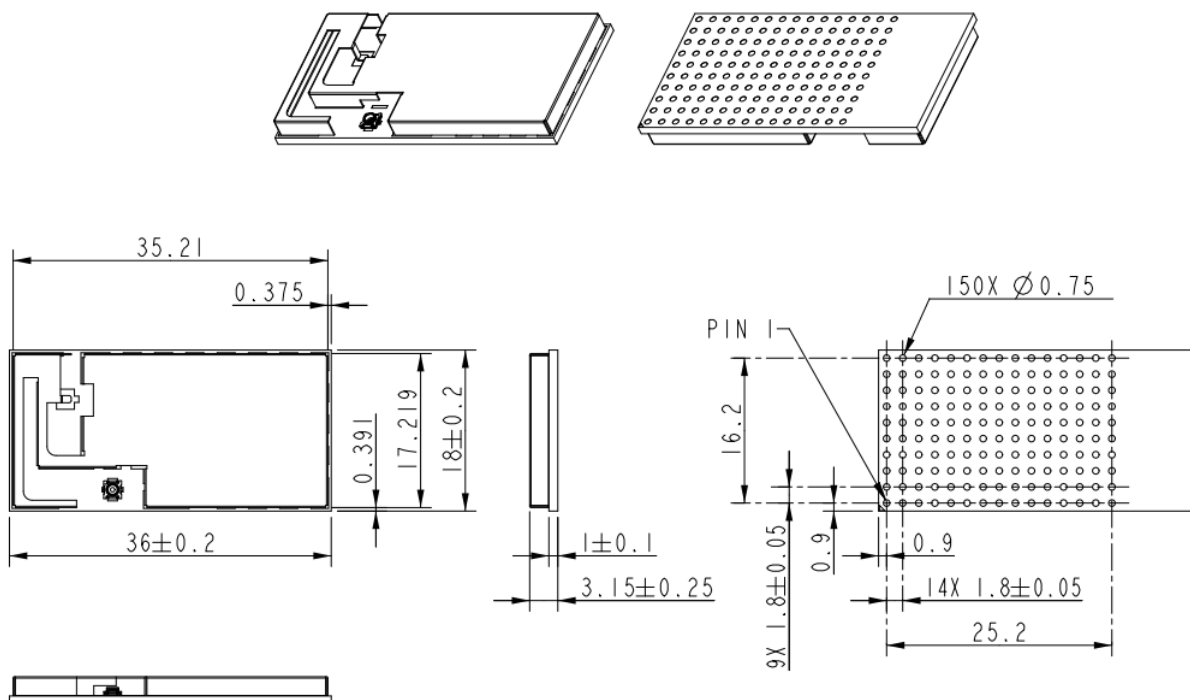
3.6.2 Bluetooth

No.	Mode	Packet Type	RF Power (dBm)	Voltage=3.3V(mA)		
				Max.	Avg.	Duty (%)
1	Transmit ^{*(1)}	PRBS 9	4	85	84	64
2	Receive ^{*(1)}	PRBS 9	n/a	56	55	
3	BLE Linked Device ^{*(2)(3)}	n/a	n/a	56.4	54.5	

* The power consumption is based on AzureWave test environment, these data for reference only.

4. Mechanical Information

4.1 Mechanical Drawing



○	K1	○	K2	○	K3	○	K4	○	K5	○	K6	○	K7	○	K8	○	K9	○	K10	○	K11	○	K12	○	K13	○	K14	○	K15
○	J1	○	J2	○	J3	○	J4	○	J5	○	J6	○	J7	○	J8	○	J9	○	J10	○	J11	○	J12	○	J13	○	J14	○	J15
○	H1	○	H2	○	H3	○	H4	○	H5	○	H6	○	H7	○	H8	○	H9	○	H10	○	H11	○	H12	○	H13	○	H14	○	H15
○	G1	○	G2	○	G3	○	G4	○	G5	○	G6	○	G7	○	G8	○	G9	○	G10	○	G11	○	G12	○	G13	○	G14	○	G15
○	F1	○	F2	○	F3	○	F4	○	F5	○	F6	○	F7	○	F8	○	F9	○	F10	○	F11	○	F12	○	F13	○	F14	○	F15
○	E1	○	E2	○	E3	○	E4	○	E5	○	E6	○	E7	○	E8	○	E9	○	E10	○	E11	○	E12	○	E13	○	E14	○	E15
○	D1	○	D2	○	D3	○	D4	○	D5	○	D6	○	D7	○	D8	○	D9	○	D10	○	D11	○	D12	○	D13	○	D14	○	D15
○	C1	○	C2	○	C3	○	C4	○	C5	○	C6	○	C7	○	C8	○	C9	○	C10	○	C11	○	C12	○	C13	○	C14	○	C15
○	B1	○	B2	○	B3	○	B4	○	B5	○	B6	○	B7	○	B8	○	B9	○	B10	○	B11	○	B12	○	B13	○	B14	○	B15
○	A1	○	A2	○	A3	○	A4	○	A5	○	A6	○	A7	○	A8	○	A9	○	A10	○	A11	○	A12	○	A13	○	A14	○	A15

PIN DEFINED (BOTTOM VIEW)

PIN Defined

5. Packaging Information

500pcs / reel, 1.5K / carton

1. Put desiccant in the middle of tape & reel.



2. Seal the tape & reel in an aluminum foil bag and put it in the inner box.



3. Put packed product into carton. One package label pasted in side of inner box, three inner boxes inside in one carton.



4. Seal the outside box by AzureWave tape.

FCC:**Federal Communication Commission Interference Statement**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

IMPORTANT NOTE:

This module is intended for OEM integrator. This module is only FCC authorized for the specific rule parts listed on the grant, and that the host product manufacturer is responsible for compliance to any other FCC rules that apply to the host not covered by the modular transmitter grant of certification. The final host product still requires Part 15 Subpart B compliance testing with the modular transmitter installed.

Additional testing and certification may be necessary when multiple modules are used. OEM integrators that they must use the equivalent antennas or C2PC will be required.

This equipment complies with FCC mobile radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20cm between the radiator & your body. If the module is installed in a portable host, a separate SAR evaluation is required to confirm compliance with relevant FCC portable RF exposure rules.

The host manufacturer should reference KDB Publication 996369 D04 Module Integration Guide.

USERS MANUAL OF THE END PRODUCT:

In the users manual of the end product, the end user has to be informed to keep at least 20cm separation with the antenna while this end product is installed and operated. The end user has to be informed that the FCC radio-frequency exposure guidelines for an uncontrolled environment can be satisfied.

The end user has to also be informed that any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment.

This device complies with Part 15 of FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesired operation.

LABEL OF THE END PRODUCT:

The final end product must be labeled in a visible area with the following " Contains TX FCC ID: TLZ-CU597".

This device complies with Part 15 of FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesired operation.

Ant list

The antenna is limited as the antenna listed.

Ant.	Brand	Model Name	Antenna Type	Connector	Gain
1	LYNwave	ALX20M-222AAC	PIFA Antenna	I-PEX	Note 1

Note1:

Ant.	Gain (dBi)	
	WLAN 2.4GHz/Bluetooth	WLAN 5GHz
1	3.7	4.1

This device is restricted for indoor use.

The antenna is limited as the antenna listed.

IC:

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

1. L'appareil ne doit pas produire de brouillage;
2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

IC Radiation Exposure Statement:

This equipment complies with IC RSS-102 radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance **20cm** between the radiator & your body.

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20cm de distance entre la source de rayonnement et votre corps

OEM integrator is still responsible for testing their end product for any additional compliance requirements required with this module installed (for example, digital device emissions, PC peripheral requirements, etc.).

IMPORTANT NOTE: In the event that these conditions cannot be met (for example certain laptop configurations or co-location with another transmitter), then the IC authorization is no longer considered valid and the IC No. cannot be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate IC authorization.

This transmitter module is authorized only for use in device where the antenna may be installed such that **20 cm** may be maintained between the antenna and users. The final end product must be labeled in a visible area with the following: "Contains transmitter module IC: 6100A-CU597".

Contient le module d'émission IC: 6100A-CU597

The Host Model Number (HMN) must be indicated at any location on the exterior of the end product or product packaging or product literature which shall be available with the end product or online.

IMPORTANT NOTE for OEM integrator:

This module is intended for OEM integrator.

The OEM integrator is still responsible for

1. ensuring that the end-user has no manual instructions to remove or install module
2. the ISED compliance requirement of the end product, which integrates this module.
3. Appropriate measurements and if applicable additional equipment authorizations of the host device to be addressed by the integrator/manufacturer.

The separate approval is required for all other operating configurations, including portable configurations and different antenna configurations